REMARKS

Receipt of the Office Action dated February 22, 2001 is acknowledged.

Claims 1-6 stand rejected by the Examiner under 35 U.S.C. 112 2nd paragraph as indefinite.

Claims 1-3 stand rejected by the Examiner under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 5,147,541 to McDermott, Jr. *et al.* ('541).

Claims 4-6 stand rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over '541 in view of U.S. Patent No. 5,073,263 to Fagundes *et al.* ('263) and further in view of U.S. Patent No. 5,082,472 to Mallouk *et al.* ('472).

Claims 7-14 have been withdrawn from consideration by the Examiner as directed to a non-elected invention.

Claim 1 has been amended. Claims 16-26 have been added. Support for these amendments to the Application can be found on pages 3-8 of the Specification. Claims 1-26 are now pending in the Application.

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the following remarks.

R jection Under 35 U.S.C. §112, 2nd Paragraph

In the Office Action dated February 14, 2001, the Examiner has rejected claims 1-6 as indefinite. In order to clarify the relationship of the film and membrane, applicants have amended claim 1 to clearly recite "a membrane element," and a sheath which "comprises polymer films wound around said membrane element and said core". Accordingly, the claim as amended clearly indicates that the polymer films are a part of the sheath and are distinct from the membrane element.

Reconsideration and withdrawal of the rejections of claims 1-6 under 35 U.S.C. §112, 2nd paragraph are respectfully requested.

Rejection Under 35 U.S.C. §102(b)

In the Office Action dated February 14, 2001, the Examiner has rejected claims 1-3 as being anticipated by McDermott, Jr. *et al.* (McDermott). It is the Examiner's position that McDermott et al. disclose a spiral wound membrane having a core and a sheath, the sheath being formed from polymer films or membranes which overlap one another and have been fused to one another in the sealed or overlapped area.

Applicants disagree with this interpretation of McDermott. McDermott clearly fails to disclose a sheath which surrounds the membrane (i.e. the core), as recited in claim 1 of the instant application, in order to increase the core's stability. This sheath represents an important part of Applicant's invention.

Page 3 (last para.) and page 4 of the present Specification explains that membrane elements of the prior art, such as the McDermott membrane, are disadvantageous and cannot be used due to their inability to withstand high temperatures and/or acidic or alkaline media. Even when improved by known means such as polypropylene baskets or adhesive tapes, such elements cannot be used under extreme conditions. Applicant's invention solves this problem. According to the invention, the membrane, i.e., the core is stabilized with a polymer wrap sheath which encapsulates this core. This sheath overlaps to some extent and is fused in the area of overlap. This has nothing to do with McDermott's folded and fused sheaths which, in fact, form the membrane, i.e. the core. As can clearly be seen in McDermotts drawings (e.g. fig. 2 and 3) it is the membrane sheet (10) which is folded and fused together in the area of reinforcing strip (18) to form a pocket. One or more of these pockets are then attached to a permeate tube together with a carrier sheet (24) and wound up to form the element (core). Restraining bands (30) may be placed at each end of the core to prevent the element from unwinding and *"an outerwrap (32) may be used to complete the module"* (McDermott et al. col. 6, lns. 11-15). However, McDermott does not further explain how this should be done. There is no hint towards the kind of material to be used as wrap nor how to place it around the element or how to fix it on the element. At col. 1, lns 26-35 in the background section of McDermott mentions that *"some type of external restraining means such as a hard shell, straps or a bypass screen, or a combination thereof may be use to hold the spirally wound leaves in tight formation around the tube."*

Again, there is no suggestion how this should be done and what kind of materials should be used. This clearly indicates that McDermott et al. neither anticipates nor renders obvious the present Invention. Present claim 1 is clearly distinguished over McDermott et al. in that it recites "a core," "a membrane element surrounding said core" and "a sheath which surrounds said membrane element and said core, wherein said sheath comprises polymer films wound around said membrane element and said core and which, at least partially, overlap one another and have been fused to one another in the area of overlap."

Reconsideration and withdrawal of the rejections of claims 1-3 under 35 U.S.C. §102(b) are respectfully requested.

Rejection Under 35 U.S.C §103(a)

In the Office Action dated February 14, 2001, the Examiner has rejected claims 4-6 under 35 U.S.C. §103(a) as being unpatentable over McDermott in view of Fagundes *et al.* ('263) and further in view of Mallouk *et al.* ('472). It is the Examiner's position that McDermott et al. disclose a spiral wound membrane having a core and a sheath, the sheath being formed from polymer film or membrane which overlap one another and have been fused to one another in the sealed or overlapped area.

As outlined above, Applicants disagree with this interpretation of McDermott. McDermott clearly fails to disclose a sheath which surrounds the membrane (i.e. the core), as recited in claim 1 of the instant application, in order

to increase the core's stability. This sheath represents an important part of Applicant's invention. Page 3 (last para.) and page 4 of the present Specification explains that membrane elements of the prior art, such as the McDermott membrane, are disadvantageous and cannot be used due to their inability to withstand high temperatures and/or acidic or alkaline media. Even when improved by known means such as polypropylene baskets or adhesive tapes, such elements cannot be used under extreme conditions. Applicant's invention solves this problem. According to the invention, the membrane, i.e., the core is stabilized with a polymer wrap sheath which encapsulates this core. This sheath overlaps to some extent and is fused in the area of overlap. This has nothing to do with McDermott's folded and fused sheaths which, in fact, form the membrane, i.e. the core. As can clearly be seen in McDermotts drawings (e.g. fig. 2 and 3) it is the membrane sheet (10) which is folded and fused together in the area of reinforcing strip (18) to form a pocket. One or more of these pockets are then attached to a permeate tube together with a carrier sheet (24) and wound up to form the element (core). Restraining bands (30) may be placed at each end of the core to prevent the element from unwinding and *"an outerwrap (32) may be used to complete the module"* (McDermott et al. col. 6, lns. 11-15). However, McDermott does not further explain how this should be done. There is no hint towards the kind of material to be used as wrap nor how to place it around the element or how to fix it on the element. At col. 1, lns 26-35 in the background section of McDermott mentions that *"some type of external restraining means such as a hard shell, straps or a*

bypass screen, or a combination thereof may be use to hold the spirally wound leaves in tight formation around the tube." Again, there is no suggestion how this should be done and what kind of materials should be used. This clearly indicates that McDermott et al. neither anticipates nor renders obvious the present Invention. Present claim 1 is clearly distinguished over McDermott et al. in that it recites "a core," "a membrane element surrounding said core" and "a sheath which surrounds said membrane element and said core, wherein said sheath comprises polymer films wound around said membrane element and said core and which, at least partially, overlap one another and have been fused to one another in the area of overlap."

The secondary references cited by the Examiner fail to resolve these deficiencies. Accordingly, no combination of McDermott, '263 and/or '472 renders the claimed invention obvious.

Reconsideration and withdrawal of the rejections of claims 4-6 under 35 U.S.C. §103(a) are respectfully requested.

Newly Added Claims 15-26

Newly added claims 15-26 are presented for examination. Claims 15-26 are believed allowable for at least the reasons set forth above. Additionally, Applicants note that newly added independent claims 21 and 26 each recite "a sheath, having a thickness of 0.3 to 28 mm" which is nowhere disclosed or suggest in the McDermott reference. Accordingly, Applicants request favorable consideration of claims 15-26.

Amendments to Claims 7-9

In accordance with MPEP §821.04, Applicants have amended the process claims to include all of the limitations of the product claims. Pursuant to MPEP §821.04, Applicants request rejoinder of the process claims upon a finding of allowable product claims.

Additionally, Applicants have amended the process claims to recite active method steps. For example, claim 7 has been amended to recite "providing a core" rather than "a core is provided". These amendments have been made to place the claims in standard format for U.S. practice and are not intended to narrow the scope of the claims.

Conclusion

In view of the foregoing amendments and remarks, Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

Date 6/14/01

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Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 19-0741 for any such fees; and applicant(s) hereby petition for any needed extension of time.

Version With Markings to Show Changes Mad

Marked up rewritten claims:

1. (Once Amended) A membrane assembly [element] comprising:

(a) a core [(9) and];

(b) a membrane element surrounding said core;

(c) a sheath which [encapsulates] surrounds [the] said membrane element and said core, wherein [the] said sheath [is formed from] comprises polymer films [(10)] wound around said membrane element and said core and which, at least partially, overlap one another [at least to some extent] and have been fused to one another in the area of overlap.

7. (Once Amended) A process for producing a membrane element, providing a [in which] a core, having a membrane element surrounding said core,(9) [is provided] with a sheath by winding a [functionalized] polymer film (10) around [the] said membrane element and said core (9), where individual layers (11) of the polymer film (10) at least partially overlap one another[, at least in some areas,] and supplying energy [is supplied] to fuse the polymer films to one another [at least in these areas] in the area of overlap.

8. (Once Amended) The process as claimed in claim 7, wherein said winding comprises winding the polymer film (10) [is wound] as a layer spirally around the membrane core (9), where the individual laps of the layer (11a) overlap to some extent.

9. (Once Amended) The process as claimed in claim 7, wherein said winding further comprises winding the polymer film (10) [is wound] as a layer spirally around the membrane core (9)[, where] and laying the individual laps of the layer (11b) [are laid] alongside one another, without overlapping each other,

and form a first layer, and further comprising winding [where] at least one further layer of polymer film (10) layers lying alongside one another [is wound] over the first layer, and then fusing this [is then fused] to the layer lying thereunder.